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10/707,501	12/18/2003	Ju Chen	FGT 1833 PA	1500
28549	7590	12/15/2004	EXAMINER	
KEVIN G. MIERZWA ARTZ & ARTZ, P.C. 28333 TELEGRAPH ROAD, SUITE 250 SOUTHFIELD, MI 48034			BURCH, MELODY M	
			ART UNIT	PAPER NUMBER
			3683	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/707,501

**Applicant(s)**

CHEN ET AL.

**Examiner**

Melody M. Burch

**Art Unit**

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/18/03</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the details of a hub, a rotor, a caliper, and a piston as described in paragraph [0037] in the specification. Also, the drawings fail to show a second distance "26" described in line 5 of paragraph [0045]. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first, second, and third states of the friction component as claimed in claims 1 and 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because both element number "40" and element number "11" point to the same object in figure 1. Also both element number "14" and element number "35" point to the same object in figure 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

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abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Marked-up Drawings" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

***Specification***

5. The disclosure is objected to because of the following informalities: first shown but not limited to line 3 from the bottom of paragraph [0019] "cylinder 74" should be changed to --cylinder 64-- and "controller 64" should be changed to --controller 74--. Please make these changes throughout the specification. In line 3 of paragraph [0026] a space should be included between "object" and "faster".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-20 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claims 1 and 15. The phrase "the vehicle" in lines 1-2 lacks proper antecedent basis in the claim.

Re: claims 6 and 21. The phrase "said threat of condition signal" in line 2 from the bottom lacks proper antecedent basis.

Re: claims 13, 19, and 33. The phrase "a limit of handling point" first claimed in line 3 of claim 13 is indefinite. It is unclear to the Examiner what Applicant is trying to define. Clarification is required.

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Re: claim 14. The phrase "a proximity sensor" in the last two lines of the claim is indefinite. It is unclear to the Examiner whether the proximity sensor in claim 14 is intended to be the same or different from that claimed in claim 1.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-6, 15, 21, 23-27, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6474753 to Rieth et al.

Re: claims 1, 23, 24, and 29. Rieth et al. show in figures 1 and 3 a vehicle braking system inherently having a wheel coupled to a vehicle, a brake disclosed in col. 3 lines 21-22 coupled to the wheel, wherein the wheel includes a friction component disclosed in col. 3 line 22 for inhibiting rotation of the wheel, the brake having a first state wherein the friction component is positioned a first distance from the wheel (before precharging), and a second state or the precharging state disclosed in col. 3 lines 20-24 wherein the friction component is positioned a second distance from the wheel closer than the first distance, the vehicle braking system comprising: a proximity sensor or device that produces element "d" in figure 3 which is one of the inputs into element 15 (also see col. 8 lines 28-32) coupled to the vehicle and sensing an object along a direction of travel of the vehicle and generating a proximity signal therefrom, and a controller 17,20 receiving the proximity signal and generating therefrom a threat of



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collision prediction signal, the controller moving the friction component from the first state to the second state as a function of a high threat of collision determined from the threat of collision prediction signal as suggested in col. 8 lines 28-39.

Re: claims 2 and 26. Rieth et al. show in figure 3 a vehicle speed sensor or device to produce "Vref" which is one of the inputs into element 15 coupled to the vehicle and sensing a speed of the vehicle and generating a vehicle speed signal therefrom. Also see the disclosure in col. 8 lines 28-32.

Re: claims 3, 4, 15, and 27. Reith et al. show in figure 3 a brake pressure sensor or element to produce "ph" which is one of the inputs into element 20 coupled to the vehicle and sensing a current brake pressure and generating a current brake pressure signal therefrom. See col. 7 lines 34-35.

Re: claim 5. Rieth et al. show in figure 3 the threat of collision prediction signal being a function of a closing velocity "d prime" which is one of the inputs into element 15 between the vehicle and the object above a threshold. Also see the disclosure in col. 8 lines 28-32.

Re: claims 6, 21, and 25. Reith et al. suggests in col. 8 lines 22-26 the limitation of the friction component moving from the second position to the first position when the brake pedal has not been depressed a predetermined time after the threat of condition signal is generated since it is stated that the precharge (or the movement from a first to a second state) can change as a function of distance (this can include diminishing the precharge or moving back to a first state as the foot moves away from the brake pedal).



***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 7-9, 22, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieth et al. in view of US Patent 6411204 to Bloomfield et al.

Re: claim 7. Rieth et al. fail to include the limitation of the proximity sensor being a radar, lidar or vision based sensor.

Bloomfield et al. teach in claim 24 the limitation of a proximity sensor being in the form of a radar sensor.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the proximity sensor of Rieth et al. to have been a radar sensor, as taught by Bloomfield et al., in order to provide a means of determining relative distance.

Re: claims 8, 9, 22, and 28. Rieth et al. fail to include the limitation of the system comprising a warning signal activating in response to the threat of collision signal.

Bloomfield et al. teach in col. 5 lines 63-66 the use of a warning signal comprising a warning light activating in response to a threat of collision signal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Rieth et al. to have included a warning signal activating in response to the threat of collision signal, as taught by

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Bloomfield et al., in order to provide a means of warning the driver of the vehicle of the potential danger.

12. Claims 10, 16, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieth et al. in view of US Patent 4969103 to Maekawa.

Rieth et al. describe the invention substantially as set forth above including the limitation of a third state (which corresponds to the actual application of the brake with the lining touching the rotor) by way of element 20 as suggested in figure 3, but do not include the limitation of the friction component reaching a third state from a signal indicating that a throttle pedal has been released.

Maekawa teach in col. 4 lines 34-37 the use of a brake control system in which a third state of actual brake application is achieved from detection of a signal indicating that a throttle pedal has been released.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Rieth et al. to have included movement of the friction component to a third state or brake application from a signal indicating that a throttle pedal has been released, as taught by Maekawa, in order to provide a means of applying the brakes independent of driver's interaction with the brake pedal to avoid the dangers associated with drivers' delayed reactions.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rieth et al. in view of US Patent 6543567 to Deluca et al.

Reith et al. fail to include the limitation of the controller inhibiting the friction

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component moving from the first state or the second state to the third state only if a failure with throttle actuation cannot be determined and fail to include the limitation wherein the movement of the friction component is halted in response to the vehicle near a limit of handling point regardless of an estimated threat.

DeLuca et al. teach in lines 6-11 from the bottom of the abstract the use of a braking system in which a controller will inhibit the friction component moving into the third state which is brake application (by disengaging the braking system as disclosed in line 10 from the bottom of the abstract) only if a failure with throttle actuation cannot be determined. Such a teaching also suggests that the movement of the friction component (particularly in the brake release direction) in response to the vehicle near a limit of handling point regardless of an estimated threat (when a malfunction occurs) See the first 6 lines of the abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Reith et al. to function, as taught by DeLuca et al., in order to provide a means of improving driving safety.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rieth et al. in view of US Patent 6488109 to Igaki et al.

Re: claim 12. Rieth et al. fail to include the limitation of the movement of the friction component being halted through throttle pedal activation.

Igaki et al. teach in col. 8 lines 9-13 the use of automatic braking or the automatic movement of a friction component being halted through throttle pedal activation.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Reith et al. to have included a means of halting the movement of the friction component upon throttle pedal activation, as taught by Igaki et al., in order to provide a means of reducing the number of unwanted braking maneuvers.

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rieth et al. in view of US Patent 4050746 to Durling.

Rieth et al. fail to include the limitation of inhibiting the movement of the friction component in response to failure of the vehicle brake system.

Durling teaches in lines 3-5 of the abstract teaches the use of preventing movement into a third state or brake application (particularly in an automatic fashion) in response to failure of the vehicle brake system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Rieth et al. to have brake movement inhibiting control, as taught by Durling, in order to improve driver safety.

16. Claims 11, 17, 19, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieth et al. in view of Maekawa and further in view of US Patent 6543567 to Deluca et al.

Reith et al. fail to include the limitation of the controller inhibiting the friction component moving from the first state or the second state to the third state only if a failure with throttle actuation cannot be determined and fail to include the limitation

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wherein the movement of the friction component is halted in response to the vehicle near a limit of handling point regardless of an estimated threat.

DeLuca et al. teach in lines 6-11 from the bottom of the abstract the use of a braking system in which a controller will inhibit the friction component moving into the third state which is brake application (by disengaging the braking system as disclosed in line 10 from the bottom of the abstract) only if a failure with throttle actuation cannot be determined. Such a teaching also suggests that the movement of the friction component (particularly in the brake release direction) in response to the vehicle near a limit of handling point regardless of an estimated threat (when a malfunction occurs) See the first 6 lines of the abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Reith et al. to function, as taught by DeLuca et al., in order to provide a means of improving driving safety.

17. Claims 18 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieth et al. in view of Maekawa and further in view of US Patent 6488109 to Igaki et al.

Re: claim 18. Rieth et al. fail to include the limitation of the movement of the friction component being halted through throttle pedal activation.

Igaki et al. teach in col. 8 lines 9-13 the use of automatic braking or the automatic movement of a friction component being halted through throttle pedal activation.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Rieth et al. to have included a means of

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halting the movement of the friction component upon throttle pedal activation, as taught by Igaki et al., in order to provide a means of reducing the number of unwanted braking maneuvers.

18. Claims 20 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rieth et al. in view of Maekawa and further in view of Durling.

Rieth et al. fail to include the limitation of inhibiting the movement of the friction component in response to failure of the vehicle brake system.

Durling teaches in lines 3-5 of the abstract teaches the use of preventing movement into a third state or brake application (particularly in an automatic fashion) in response to failure of the vehicle brake system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the system of Rieth et al. to have brake movement inhibiting control, as taught by Durling, in order to improve driver safety.

### ***Double Patenting***

19. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).



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20. Claims 1 and 23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 13 of U.S. Patent No. 6677855 in view of Rieth et al.. Both the instant invention and the patent '855 claim a braking system, a friction element moving from a first state to a second state, and a sensor. Patent '855 fails to include the limitation of the sensor being a proximity sensor or the limitation of a controller receiving a proximity signal to generate a threat of collision prediction signal.

Rieth et al. teach in figure 3 the use of a proximity sensor or element that detects distance "d" and the use of a controller 17,20 to generate a threat of collision prediction signal.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Patent '855 to have included a proximity sensor and a controller, as taught by Rieth et al., in order to provide a means of determining a degree of precharging of the brakes.

### ***Conclusion***

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 703-308-0830. The fax phone



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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*mmb*  
mmb

December 10, 2004

*Melody M. Bouck*  
12/10/04